



Assessment of heat-related health impacts in Brisbane, Australia: Comparison of different heatwave definitions

Author(s): Tong S, Wang XY, Barnett AG
Year: 2010
Journal: PLoS One. 5 (8): e12155

Abstract:

BACKGROUND: There is no global definition of a heatwave because local acclimatisation and adaptation influence the impact of extreme heat. Even at a local level there can be multiple heatwave definitions, based on varying temperature levels or time periods. We investigated the relationship between heatwaves and health outcomes using ten different heatwave definitions in Brisbane, Australia.

METHODOLOGY/PRINCIPAL FINDINGS: We used daily data on climate, air pollution, and emergency hospital admissions in Brisbane between January 1996 and December 2005; and mortality between January 1996 and November 2004. Case-crossover analyses were used to assess the relationship between each of the ten heatwave definitions and health outcomes. During heatwaves there was a statistically significant increase in emergency hospital admissions for all ten definitions, with odds ratios ranging from 1.03 to 1.18. A statistically significant increase in the odds ratios of mortality was also found for eight definitions. The size of the heat-related impact varied between definitions.

CONCLUSIONS/SIGNIFICANCE: Even a small change in the heatwave definition had an appreciable effect on the estimated health impact. It is important to identify an appropriate definition of heatwave locally and to understand its health effects in order to develop appropriate public health intervention strategies to prevent and mitigate the impact of heatwaves.

Source: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2921381>

Resource Description

Exposure : ☒

weather or climate related pathway by which climate change affects health

Air Pollution, Meteorological Factors, Temperature

Air Pollution: Interaction with Temperature, Ozone, Particulate Matter, Other Air Pollution

Air Pollution (other): NO₂

Temperature: Extreme Heat

Geographic Feature: ☒

resource focuses on specific type of geography

Ocean/Coastal, Urban

Climate Change and Human Health Literature Portal

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Australasia

Health Impact:

specification of health effect or disease related to climate change exposure

Injury, Morbidity/Mortality, Other Health Impact

Other Health Impact: heat-related illness

Resource Type:

format or standard characteristic of resource

Research Article

Timescale:

time period studied

Time Scale Unspecified